

REMARKS

Claims 1, 3, 21 and 35-41 are pending in the application. Claims 1, 3, 21 and 35-40 stand rejected. Claim 41 is newly added. Favorable reconsideration is respectfully requested.

Claims 1, 3 and 35 were provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-6, 11 and 14 of co-pending application 09/481,365.

The criteria for establishing a *prima facie* case of obviousness-type double patenting parallel those for establishing obviousness under 35 U.S.C. § 103(a). Please see, for example, MPEP § 804.II.B.1.

Further, to establish a *prima facie* case of obviousness under § 103, all claim limitations of a claimed invention must be taught or suggested by the prior art. See MPEP, §2143.03 and *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (CCPA 1974).

In view of the foregoing authority, Applicants respectfully submits that the rejection of claims 1, 3, and 35 based on non-statutory double patenting should be withdrawn for at least the reason that the claims of the cited application do not teach or suggest the invention recited in the rejected claims.

Claim 1 of the present application has been amended as set forth above to emphasize advantageous features. In particular, claim 1 as amended now recites that the assisting device comprises an assisting drive force control device including means for changing a relationship between the assisting drive force and the brake operating condition quantity in normal operation of the braking system. Claim 3 incorporates the recited feature by dependency. Support for the amendment to claim 1 can be found, for instance, in the present application in the last paragraph on page 3 and on page 5, lines 1-15. By contrast, claims 1-6, 11 and 14 of co-pending application 09/481,365 do not require such a feature.

Claims 1-6, 11 and 14 of co-pending application 09/481,365 also lack a number of features recited in claim 35 of the present application. For example, claim 35 requires the master cylinder characteristic control device to control an amount of the fluid in the pressurizing chamber of the master cylinder. Claim 35 further requires the master cylinder characteristic control device to control the fluid amount in the

pressurizing chamber on the basis of the operating amount of the brake operating member detected by the sensing device. Claim 35 further requires the master cylinder characteristic control device to control a relationship between a position of the pressurizing piston relative to the cylinder housing and the fluid pressure in the pressurizing chamber, for controlling a fluid pressurizing characteristic of the master cylinder. Claims 1-6, 11 and 14 of co-pending application 09/481,365 lack the noted features.

In view of the foregoing, it is clear that the scope of claims 1-6, 11 and 14 of the co-pending application, and claims 1, 3 and 35 of the present application are not co-extensive. Therefore, concerns about an unjustified timewise extension of the "right to exclude" are unwarranted. According, withdrawal of the rejection of claims 1, 3 and 35 of the present application for obviousness-type double patenting is respectfully requested.

Claims 1, 35-37 and 39 were rejected under 35 USC 102(b) as being anticipated by Lohberg (U.S. Patent No. 4,828,332).

It is noted that anticipation requires the disclosure, in a prior art reference, of each and every limitation as set forth in the claims. *Titanium Metals Corp. v. Banner*, 227 USPQ 773 (Fed. Cir. 1985). There must be no difference between the claimed invention and reference disclosure for an anticipation rejection under 35 U.S.C. § 102. *Scripps Clinic and Research Foundation v. Genentech, Inc.*, 18 USPQ2d 1001 (Fed. Cir. 1991). In view of the foregoing authority, the cited reference fails to support the asserted rejection.

As noted above, claim 1 has been amended to recite that the assisting drive force control device includes "means for changing a relationship between said assisting drive force and said brake operating condition quantity, said relationship being in a normal operation of the braking system with an operation of said brake operating member". Thus, Lohberg does not anticipate the invention as recited in amended claim 1 for at least the reason that Lohberg is silent as to the noted structure.

Lohberg relates to a brake system with anti-skid control and traction slip control. Lohberg describes a control element 3 that provides an auxiliary force that, in conjunction with a brake operating force, cause a lever 6 to be displaced without tilting during a

normal operation of the brake system. More particularly, in the paragraph bridging cols. 3 and 4, Lohberg describes how control element 3 is operated according to an output signal of travel measuring device 19, which detects a travel of push rod 5. Push rod is connected to a brake pedal 2 and is displaced by actuation of the brake pedal in "normal" braking operations (col. 3, lines 46-48). Push rod 5 and a driving shaft 25 of control element 3 are connected to respective ends of a lever 6. Control element 3 is operated to displace driving shaft 25 (corresponding to the auxiliary force) by the same amount as the detected travel of the push rod 5 (corresponding to the brake operating force), so that lever 6 is displaced without tilting, to operate booster 8 and master cylinder 1 (col. 3, lines 56-67).

In order to maintain the non-tilting orientation of lever 6, because the two arms 6', 6" of lever 6 have the same length (col. 3, lines 38-41), the auxiliary force generated by control element 3 must be half of a total input force applied to the booster 8 (the total input force applied to a master cylinder piston) during a normal operation of the braking system. The other half of the total input force is generated by operation of the brake pedal 2, and is therefore proportional to the brake operating force. Thus, it is clear that in the structure described in Lohberg, it is not possible to change a relationship between the auxiliary (assisting) drive force and the operating force of the brake pedal under normal operating conditions. Therefore, Lohberg cannot anticipate the structure recited in claim 1 as amended, which includes "means for changing a relationship between said assisting drive force and said brake operating condition quantity", etc., as noted above.

Lohberg also fails to disclose features recited in claim 35. Among other features, a master cylinder characteristic control device as recited in claim 35 is absent from Lohberg. The claimed master cylinder characteristic control device controls "an amount of the fluid in said pressurizing chamber of said master cylinder, on the basis of the brake operating condition quantity" (detected by the sensing device), to thereby "control a relationship between a position of said pressuring piston relative to said cylinder housing and the fluid pressure in said pressurizing chamber", for controlling a fluid pressurizing characteristic of the master cylinder. Lohberg fails to teach any means for changing the amount of the fluid in the pressurizing chamber of the master cylinder 1 on the basis of a brake operating condition quantity, and accordingly fails to teach any means for changing

a relationship between the position of the pressuring piston and the fluid pressure in the pressurizing chamber, that is, a relationship between the operating stroke of the brake operating member and the fluid pressure in the brake cylinder. Therefore, Lohberg cannot meet the specific recitations of claim 35.

Claims 36-37 are dependent upon claim 1, and claim 39 is dependent upon claim 35. Thus, claims 36, 37 and 39 incorporate the features of the claims they respectively depend upon. Consequently, claims 36, 37 and 39 are allowable for at least the reasons discussed in connection with claims 1 and 35. Accordingly, withdrawal of the rejection of claims 1, 35-37 and 39 as anticipated by Lohberg is respectfully requested.

Claims 1, 3, 21, 35-37 and 39 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Sorensen (U.S. Patent No. 5,549,361) in view of Ganzel (U.S. Patent No. 6,053,582).

Requirements for sustaining a rejection under § 103 have been outlined above. The cited references fail to support the asserted rejection in view of the cited authority.

The primary reference, Sorensen, fails to teach or suggest structure called for in specific recitations of claims 1 and 35. The Examiner alleges that Sorensen teaches an assisting device according to the invention, citing a brake power booster 24 of Sorensen as an equivalent. However, there is no explicit disclosure in Sorensen, made with regard to the booster 24, of any of the claimed features of the assisting device recited in claim 1 of the present application. For instance, Sorensen does not disclose that the booster 24 is applied to a pressurizing piston of a master cylinder or that it is operable on the basis of a brake operating condition quantity, as required of the assisting device in claim 1. Additionally, there is no disclosure in Sorensen of changing the relationship between a force output by the booster 24 (presumably, by the Examiner's analysis, the equivalent of the claimed assisting drive force) and the brake operating condition quantity as called for by the amendment to claim 1 above.

The Examiner further appears to allege that booster 24 of Sorensen is the equivalent of the master cylinder characteristic control device recited in claim 35 (item 8 of the above-identified Office Action). However, claim 35 specifically calls for the master cylinder characteristic control device to control a fluid amount in a pressurizing chamber of a master cylinder, on the basis of a brake operating condition quantity of a

brake pedal, to thereby control a relationship between a position of a pressurizing piston relative to a cylinder housing and the fluid pressure in the pressurizing chamber.

Sorensen fails to describe any such features in connection with booster 24.

Instead, Sorensen teaches maintaining the fluid pressure applied to the brake power booster 24 at a desired level. In particular, Sorensen purports to solve a problem wherein fluid pressure applied from a power steering system to the brake power booster increases at an undesirably high rate and to an undesirably high level when the power steering system is operated during an operation of the braking system. See col. 1, lines 16-19. To this end, Sorensen describes using booster apply and boost relief valves 50, 62 and electrically controlling these valves when the power steering system is activated, that is, when torque-sensitive four-way valve 20 is operated during an operation of brake pedal 72 during which the fluid pressure at the check valve 44 is held at a high level of 600 psi. See col. 1, lines 31-35, and col. 3, lines 20-26 and 31-36.

The activation of the power steering system causes a further increase of the fluid pressure in the brake power booster 24 from the 600 psi level. To prevent this rise of the fluid pressure to an undesirably high level, the boost apply and relief valves 50, 62 are alternately opened and closed to lower the fluid pressure in the booster 24 to a "reasonably low, predictable level" (col. 1, lines 36-38) and to maintain the fluid pressure at this low level. Thus, Sorensen actually teaches away from the claimed invention. More specifically, as outlined above, Sorensen seeks to maintain the fluid pressure in booster 24 at a desired level. By contrast, claim 1 of the present application requires the assisting drive force to be controlled on the basis of the operating condition of the brake pedal. Concerning claim 35, Sorensen also fails to suggest changing the relationship between the fluid amount in a master cylinder pressurizing chamber and the brake operating condition quantity, as required.

Ganzel does not remedy the deficiencies of Sorensen. For instance, Ganzel clearly does not independently teach or suggest the claimed features demonstrated in the foregoing to be absent from Sorensen. Moreover, Ganzel does not suggest the sensing device recited in claims 1 and 35, as alleged by the Examiner. For instance, Ganzel discloses a force sensor 11 and a switch 201, but fails to suggest any use of these devices in controlling any assisting drive force which is applied to a master

cylinder piston or booster and which is different from a drive force based on the operating force of a brake pedal.

Claims 3, 21 and 36-37 are dependent upon claim 1, and consequently incorporate its features. Claim 39 is dependent upon claim 35 and thus incorporates its features. Therefore, claims 3, 21, 36, 37 and 39 are not rendered obvious by Sorensen and Ganzel for at least the reasons discussed in connection with independent claims 1 and 35.

Accordingly, withdrawal of the rejection of claims 1, 3, 21, 35-37 and 39 as being unpatentable in view of Sorensen and Ganzel is respectfully requested.

Claims 38 and 40 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Sorensen in view of Schonlau (U.S. Patent No. 4,914,917).

Claim 38 is dependent upon claim 1, and claim 40 is dependent upon claim 35. As demonstrated above, the primary reference, Sorensen, fails to render independent claims 1 and 35 obvious. Moreover, Schonlau does not independently render claims 1 and 35 obvious. Therefore, the combination of Sorensen and Schonlau cannot render the independent claims obvious. Accordingly, since dependent claims 38 and 40 incorporate the features of independent claims 1 and 35, respectively, claims 38 and 40 are allowable over the combination of Sorensen and Schonlau for at least the reasons discussed in connection with claims 1 and 35.

Accordingly, withdrawal of the rejection of claims 38 and 40 as being unpatentable over Sorensen and Schonlau is respectfully requested.

Claim 41 has been newly added as set forth above. Since claim 41 is dependent on claim 1 and therefore incorporates its features, claim 41 is allowable over the art of record for at least the reasons discussed in connection with claim 1.

CONCLUSION

Attached hereto is a marked-up version of the changes made to the claim by the current amendment. The attached page is captioned "**Version of the Amended Claims Marked-Up to Show Changes Made.**"


In light of the above discussion, applicant respectfully submits that the present application is in all aspects in allowable condition, and earnestly solicits favorable reconsideration and early issuance of a Notice of Allowance.

The Examiner is invited to contact the undersigned at (202) 220-4323 to discuss any matter concerning this application. The Office is authorized to charge any fees under 37 C.F.R. 1.16 or 1.17 related to this communication to Deposit Account No. 11-0600.

Respectfully submitted,

Dated: _____

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Version of the Amended Claims Marked-Up to Show Changes Made

1. (Twice Amended) A hydraulically operated braking system comprising:
 - a brake operating member operable by an operator;
 - a master cylinder including a pressurizing piston operatively connected to said brake operating member and partially defining a pressurizing chamber, said pressurizing piston being moved by said brake operating member to pressurize a fluid in said pressurizing chamber;
 - a brake cylinder actuated by the pressurized fluid received from said master cylinder;
 - a sensing device for detecting [at least one of] a brake operating condition quantity indicative of an operating condition of said brake operating member [and a vehicle running condition quantity indicative of a running condition of an automotive vehicle having a wheel which is braked by said brake cylinder]; and
 - an assisting device for applying to said pressurizing piston an assisting drive force which is different than a primary drive force to be applied to said pressurizing piston on the basis of a brake operating force acting on said brake operating member[, said assisting device being electronically controllable to control said assisting drive force],
- and wherein said assisting device comprises an assisting drive force control device electrically operable to control said assisting drive force on the basis of said brake operating condition quantity detected by said sensing device,
- said assisting drive force control device including means for changing a relationship between said assisting drive force and said brake operating condition quantity, said relationship being in a normal operation of the braking system with an operation of said brake operating member.

Kindly add new claim 41 as follows:

- 41. (New) A hydraulically operated braking system according to claim 1, wherein said sensing device further detects a vehicle running condition quantity indicatives of a running condition of an automotive vehicle having a wheel which is braked by said brake cylinder, and said assisting drive force control device further includes means for changing a relationship between said assisting drive force and said brake operating condition quantity on the basis of said vehicle running condition quantity during said normal operation of the braking system.- -